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1. Appeal Brief (20pgs) and
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Appellant:	Grady M. Wood	**Appeal Brief**
Serial No.	10/777,955	
Filing Date	2/12/2004	
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On March 23, 2006, Appellants filed a notice of appeal from a second rejection of claims **1-40** set forth in the Office Action mailed November 23, 2005. This Appeal Brief is accompanied by a fee in the amount of $ 500.00 as required under 37 C.F.R. §1.17(c).

1. **Real party in interest**

The real party in interest in the above-captioned application is the assignee Intersil Americas Inc.

2. **Related appeals and interferences**

There are no other appeals or interferences known to the Appellants that will have a bearing on the Board's decision in the present appeal.

3. **Status of claims**

Claims **1-40** were rejected in an Office Action mailed November 23, 2005. The rejection of claims **1-40** is the subject of this appeal.

4. **Status of amendments**

No amendment has been filed subsequent to the Office Action mailed November 23, 2005.

5. **Summary of claimed subject matter**

Pursuant to 37 C.F.R. §41.37(c)(1)(v), Applicant provides the following concise explanation of the subject matter defined in each independent claim with reference to the specification by page and line number and to the drawings by reference number. Applicant submits that the citations to the specification and drawings are not intended to be exhaustive and that other support for the various claims may also be found throughout the specification and drawings.

A. Claim 1

Claim 1 is directed to a method of operating an EL-lamp circuit. An example of the aspects in this claim is illustrated in the flow chart of 3A and the driver circuit of Figure 300. The method includes storing energy on a first electrode 307 of a EL-lamp 308 with a power supply 310 during a charging cycle. See block 354 of Figure 3A which is explained in paragraph 39 (page 12, lines 1-2) of the present application. The method further includes pumping the energy stored on the first electrode 307 to a positive terminal of the power supply 310 during a discharging cycle. See block 358 of Figure 3A which is explained further in Paragraph 39 (page 12, lines 3-4.). The pumping of energy to the power supply 310 is further described in paragraph 36 (page 10, lines 14-18) and paragraph 37 (page 11, lines 3-11).

B. Claim 6

Claim 6 is directed to a method of operating a cycle of an EL-lamp driver circuit 300. An example of aspects in this claim can also be illustrated in the flow chart of 3A and the driver circuit of Figure 300. The method includes placing a select amount of positive charge on a first electrode 307 of a load 308 with a power supply 310 with the use of a charging inductor 304. See block 354 of Figure 3A which is explained in paragraph 39 (page 12, lines 1-2) of the present application. Discharging the positive charge on the first electrode 307 to a positive terminal of the power supply 310 with the use of a discharging inductor 306. See block 358 of Figure 3A which is explained further in Paragraph 39 (page 12, lines 3-4.). The pumping of energy to the power supply 310 is further described in paragraph 36 (page 10, lines 14-18) and paragraph 37 (page 11, lines 3-11). Placing a select amount of positive charge on a second electrode 309 of the load 308 with the power supply 310 with the use of the charging inductor 304 and discharging the positive charge on the second electrode 309 to the positive terminal of the power supply 310 with the use of the discharging inductor 306. See Blocks 362 and 366 of Figure 3A which are explained in paragraph 39, (page 12, lines 6-10).

C. Claim 11

Claim 11 is directed to a method of operating a cycle of an EL-lamp driver circuit. The aspects of this claim are illustrated in the flow chart of Figure 5A and the driver circuit of Figure 5. The method includes placing a select amount of positive charge on a first electrode 517 of a load 516 with a power supply. See block 554 on Figure 5A which is described in paragraph 49 (page 16, lines 1-2) and paragraph 48 (page 15, lines 19-21). Discharging the positive charge on the first electrode 517 to a positive terminal of the power supply. See block 558 on Figure 5A which is described in paragraph 49 (page 16, lines 4-6) and paragraph 48 (page 15, lines 25-27). Placing a select amount of negative charge on the first electrode of the load with the power supply and discharging the negative charge on the first electrode. See block 562 and block 566 of Figure 5A which is described in paragraph 49 (page 16, lines 7-13).

D. Claim 18

Claim 18 is directed to a method of operating an EL-lamp circuit. An example of the aspects of this claim can be seen in Figures 3A and 3. The method includes storing energy from a power supply on an EL-lamp during a charging cycle and returning energy stored on the EL-lamp to the power supply during a discharge cycle via inductive pumping. See blocks 354, 358, 362 and 366 of Figure 3A. Also see paragraph 36 (page 10, lines 14-18 and page 10 line 23 through page 11, line 19).

E. Claim 36

Claim 36 is directed to a method of operating an EL-lamp circuit. An example of aspects in this claim can also be illustrated in the flow chart of 3A and the driver circuit of Figure 300. The method includes selectively providing a charging path from a power supply to the EL-lamp during a charging cycle. See block 352 of Figure 3A which is described in paragraph 39 (page 11, line 27 through page 12, line 1). Cycling a first transistor in response to a first digital signal during the charging cycle. See paragraph 36 (page 10, lines 20 -22). Storing energy from a power supply on an EL-lamp during the

charging cycle. See block 354 which is described in paragraph 39 (page 12, lines 1-2). Selectively providing a discharging path from the El-lamp to the power supply during a discharging cycle. See block 356 which is described in paragraph 39 (page 12, lines 2-3). Cycling a second transistor in response to a second digital signal during the discharging cycle and returning energy stored on the EL-lamp to the power supply during the discharge cycle via inductive energy pumping. See block 356 which is described in paragraph 39 (page 12, lines 2-3). See also paragraphs 36 and 37 (page 10, line 25 through page 11, line 19).

6. Grounds of rejection to be reviewed on appeal

Whether claims 1-40 are anticipated under 35 U.S.C. §102(b) by Andersson (U.S. Patent No. 6, 157, 138).

7. Argument

A. Rejection of claims under 35 U.S.C. §102(b).

i. The Applicable Law

35 U.S.C. § 102 provides in relevant part:

A person shall be entitled to a patent unless-

(b) the invention was patented or described in a printed publication in this or a foreign country or in a public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

A claim is anticipated under 354 U.S.C. § 102 only if each and every element as set forth in the claim is found, either expressly or inherently, in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051,1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the...claim." *Richardson v. Suzuki Motor Co.* 868 F.2d 1226, 1236, 9 U.S.P.Q.2d 1913, 1920 (Fed. Cir. 1989). The elements must be arranged as required by the claim, but identical terminology is not required. *In re Bond*, 910 F. 2d 831, 15 U.S.P.Q.2d 1566 (Fed. Cir. 1990).

Anticipation focuses on whether a claim reads on a product or process disclosed in a prior art reference, not on what the reference broadly teaches. *Kalman v. Kimberly-Clark Corp.*, 713 F.2d 760, 218 U.S.P.Q. 781 (Fed. Cir. 1983). To anticipate a claim, a reference must disclose every element of the challenged claim and enable one skilled in the art to make the anticipating subject matter. *PPG Industries, Inc. v. Guardian Industries Corp.*, 75 F.3d 1558, 37 U.S.P.Q. 2d 1618 (Fed Cir. 1996)

ii. Rejection of independent claim 1

The Applicant respectfully traverses the Examiners rejection of independent claim 1 under section 102(b). The Andersson reference does not teach every aspect of claim 1. For example the Andersson reference does not teach "pumping the energy stored on the first electrode to a positive terminal of the power supply during a discharging cycle," as is claimed in claim 1 of the present application. The Andersson reference merely relates to recycling a battery stored current on an EL device 12 by discharging it to a battery 30. Please see abstract, column 2, lines 63 through 66, column 5, line 63 and claim 1 of the Andersson reference. The "recycled battery stored current" in the Andersson reference is charge. Charge is stored on the load since current cannot be stored on a capacitive load. It is this charge on the load that is restored to the battery in the Andersson reference. Charge (Q) is represented by the equation Q=CV, where C is the value of the capacitor and V is the voltage. What is claimed in Claim 1 is "pumping the energy stored on the first electrode to a positive terminal of the power supply during a discharging cycle." Energy (E) is represented by the equation $E = \frac{1}{2}CV^2$. As illustrated, energy (E) is different than charge (C). By "pumping energy" back to the power supply a more efficient system is obtained. Referring to Figure 3 of the present application, an example of pumping energy in one embodiment of the present application is explained. The pumping in this embodiment is accomplished with transistor 320 and discharging transistor 306. Assume that side 309 of the load is charged positively at the start of a discharge cycle. Transistor 320 is turned on and current will start to flow through diode 314 and 322 and inductor 306 into the positive terminal of the battery 310.

Transistor is then turned off. Since, current through an inductor cannot change instantaneously, the current will continue to flow for some time through diode 326 and the inductor 306 into the positive terminal of the battery 310. The timing is set so that the current through the discharging inductor 306 does not have sufficient time to return to zero before transistor 320 is turned on again. **With this arrangement, more charge than is stored on the load 308 is returned to the battery.** On the other half cycle, the discharge is accomplished in a like manner through diode 316. This is pumping of energy is described in paragraphs 36 and 37 of the present application. The Anderrson reference does not teach this aspect. Since, the Andersson reference does not teach all of the aspects of claim 1 of the present application, the rejection of claim 1 under section 102 is improper.

Accordingly, the Applicant respectfully requests the reversal of the Examiner's rejection of Claim 1 under section 102. Moreover, the Applicant further requests the reversal of the rejections to claims that depend from Claim 1 since these dependant claims further define patentably distinct Claim 1.

iii. Rejection of independent claim 6

The Applicant respectfully traverses the Examiners rejection of independent claim 6 under section 102(b). The Andersson reference does not teach every aspect of Claim 6. For example the Andersson reference does not teach "discharging the positive charge on the first electrode to a positive terminal of the power supply **with the use of a discharging inductor**," or "discharging the positive charge on the second electrode to the positive terminal of the power supply with **the use of the discharging inductor**." Emphasis added. The Andersson reference does not teach the use of a discharging inductor as is disclosed and claimed in claim 6 of the present application. Since, the Andersson reference does not teach all of the aspects of claim 6 of the present application, the rejection of claim 6 under section 102 is improper.

Accordingly, the Applicant respectfully requests the reversal of the rejection of Claim 6 under section 102. Moreover, the Applicant further requests the reversal of

rejections to claims that depend from Claim 6 since these dependant claims further define patentably distinct Claim 6.

iv. Rejection of independent claim 11

The Applicant respectfully traverses the Examiners rejection of independent claim 11 under section 102(b). The Andersson reference does not teach every aspect of Claim 11. For example the Andersson reference does not teach "placing a select amount of positive charge **on a first electrode** ...." then "placing a select amount of negative charge **on the first electrode** of the load with the power supply; and discharging the negative charge on the first electrode," (emphasis added) as is claimed in claim 11 of the present application. In the embodiment of Figure 1, of the Andersson reference, a first electrode 11 of a load is charged with positive charges, column 3, line 66 to column 4, line1 of the Andersson reference. The second terminal 13 of the load 12 is then charged negatively during a negative charge cycle, column 4, line 34-53 of the Andersson reference. This is not what is claimed in claim 11 of the present application. Since, the Andersson reference does not teach all of the aspects of claim 11 of the present application, the rejection of claim11 under section 102 is improper.

Accordingly, the Applicant respectfully requests the reversal of the rejection of Claim 11 under section 102. Moreover, the Applicant further requests the reversal of rejections to claims that depend from Claim 11 since these dependant claims further define patentably distinct Claim 11.

v. Rejection of independent claim 18

The Applicant respectfully traverses the Examiners rejection of independent claim 18 under section 102(b). The Andersson reference does not teach every aspect of Claim 18. For example the Andersson reference does not teach "returning energy stored on the EL-lamp to the power supply during a discharge cycle via

inductive pumping," as is claimed in claim 18 of the present application. The Andersson reference merely relates to recycling a battery stored current on an EL device 12 by discharging it to a battery 30. Please see abstract, column 2, lines 63 through 66, column 5, line 63 and claim 1 of the Andersson reference. The "recycled battery stored current" in the Andersson reference is charge. Please see the discussion above in regard to claim 1 regarding the difference in charge and energy transfer. Since, the Andersson reference does not teach all of the aspects of claim 18 of the present application, the rejection of claim 18 under section 102 is improper.

Accordingly, the Applicant respectfully requests the reversal of the rejection of Claim 18 under section 102. Moreover, the Applicant further requests the reversal of rejections to claims that depend from Claim 18 since these dependant claims further define patentably distinct Claim 18.

vi. Rejection of independent claim 36

The Applicant respectfully traverses the Examiners rejection of independent claim 18 under section 102(b). The Andersson reference does not teach every aspect of Claim 18. For example the Andersson reference does not teach "returning stored energy ... via inductive energy pumping," as is claimed in Claim 36 of the present invention. The Andersson reference merely relates to recycling a battery stored current on an EL device 12 by discharging it to a battery 30. Please see abstract, column 2, lines 63 through 66, column 5, line 63 and claim 1 of the Andersson reference. The "recycled battery stored current" in the Andersson reference is charge. Please see the discussion above in regards to claim 1 about the difference in charge and energy transfer. Since, the Andersson reference does not teach all of the aspects of claim 1 of the present application, the rejection of claim 36 under section 102 is improper.

Accordingly, the Applicant respectfully requests the reversal of the rejection of Claim 36 under section 102. Moreover, the Applicant further requests the reversal of rejections to claims that depend from Claim 36 since these dependant claims further define patentably distinct Claim 36.

Respectfully submitted,

Date: 5-22-06

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CLAIMS APPENDIX

1. A method of operating an EL-lamp circuit, the method comprising:

storing energy on a first electrode of a EL-lamp with a power supply during a charging cycle; and

pumping the energy stored on the first electrode to a positive terminal of the power supply during a discharging cycle.

2. The method of claim 1, wherein pumping the energy stored on the first electrode of the load further comprises:

cycling on and off a discharge current path that couples the first electrode to ground;

when the discharge current path is cycled on, conducting current from the first electrode to the positive terminal of the power supply; and

when the discharge current path is cycled off, continuing to conduct current to the positive terminal of the power supply via a discharging inductor.

3. The method of claim 2, wherein the discharge current path is off longer than it is on during the cycle.

4. The method of claim 1, further comprising:

storing energy on a second electrode of the EL-lamp with the power supply; and

pumping the energy stored on the second electrode to the positive terminal of the supply.

5 The method of claim 4, wherein pumping the energy stored on the second electrode of the load further comprises:

cycling on and off a discharge current path that couples the second electrode to ground;

when the discharge current path is cycled on, conducting current from the second electrode to the positive terminal of the power supply with the use of an inductor; and

when the discharge current path is cycled off, conducting current to the positive terminal of the battery via the inductor.

6. A method of operating a cycle of an EL-lamp driver circuit, the method comprising:

placing a select amount of positive charge on a first electrode of a load with a power supply with the use of a charging inductor;

discharging the positive charge on the first electrode to a positive terminal of the power supply with the use of a discharging inductor;

placing a select amount of positive charge on a second electrode of the load with the power supply with the use of the charging inductor; and

discharging the positive charge on the second electrode to the positive terminal of the power supply with the use of the discharging inductor.

7. The method of claim 6, wherein placing a select amount of positive charge on a first electrode of a load further comprises:

cycling on and off a charging current path through the charging inductor that is coupled between the positive terminal of the power supply and a negative terminal of the power supply; and

when the charging current path is off, coupling charge to the first electrode.

8 The method of claim 6, wherein placing a select amount of positive charge on a second electrode of a load further comprises:

cycling on and off a charging current path through the charging inductor that is coupled between the positive terminal of the power supply and a negative terminal of the power supply; and

when the charging current path is off, coupling charge to the second electrode.

9. The method of claim 6, wherein discharging the positive charge on the first electrode of the load further comprises:

cycling on and off a discharge current path through the discharging inductor that couples the first electrode to the positive terminal of the power supply; and

when the discharge current path is cycled on, conducting current from the first electrode to the positive terminal of the power supply.

10. The method of claim 6, wherein discharging the positive charge on the second electrode of the load further comprises:

cycling on and off a discharge current path through the discharging inductor that couples the second electrode to ground; and

when the discharge current path is cycled on, conducting current from the second electrode to the positive terminal of the power supply.

11. A method of operating a cycle of an EL-lamp driver circuit, the method comprising:

placing a select amount of positive charge on a first electrode of a load with a power supply;

discharging the positive charge on the first electrode to a positive terminal of the power supply;

placing a select amount of negative charge on the first electrode of the load with the power supply; and

discharging the negative charge on the first electrode.

12. The method of claim 11, wherein placing a select amount of positive charge on the first electrode further comprises:

turning on a first current path between the positive terminal of the power supply and a first side of an inductor; and

cycling on and off a second current path between a second side of the inductor and ground.

13. The method of claim 12, wherein the first current path is turned on by a first transistor and the second current path is cycled on and off by a second transistor.

14. The method of claim 11, wherein discharging the positive charge on the first electrode further comprises:

cycling on and off a third current path between the first electrode and the positive terminal of the power supply.

15. The method of claim 14, wherein the third current path is cycled on and off by a transistor.

16. The method of claim 11, wherein placing a select amount of negative charge on the first electrode further comprises:

turning on a second current path between a second side of an inductor and ground; and

cycling on and off a first current path between the positive terminal of the power supply and a first side of the inductor.

17. The method of claim 16, wherein the second current path is turned on by a second transistor and the first current path is cycled on and off by a first transistor.

18. A method of operating an EL-lamp circuit, the method comprising:

storing energy from a power supply on an EL-lamp during a charging cycle; and

returning energy stored on the EL-lamp to the power supply during a discharge cycle via inductive pumping.

19. The method of claim 18, wherein storing energy from the power supply on an EL-lamp during a charging cycle further comprises:

cycling a first transistor in response to a first digital signal.

20. The method of claim 19, further comprising:

inductively pumping energy to the EL-lamp in response to the cycling of the first transistor.

21. The method of claim 19, wherein the energy stored on the EL-lamp during a charging cycle is $1/2V^2C$, wherein V is the voltage and C is the capacitance of a load of the EL-lamp.

22. The method of claim 18, wherein storing energy from the power supply on an EL-lamp during a charging cycle further comprises:

selectively creating a charging path to the EL-lamp.

23. The method of claim 22, wherein selectively creating a charging path further comprises:

selectively activating one or more switches.

24. The method of claim 18, wherein returning energy stored on the EL-lamp to the power supply during a discharge cycle further comprises:

selectively providing a discharge path to the power supply during the discharge cycle.

25. The method of claim 24, wherein selectively providing a discharge path to the power supply during a discharge cycle further comprises:

selectively switching one or more switches.

26. The method of claim 24, wherein the discharge cycle is every half cycle.

27. The method of claim 18, wherein returning energy stored on the EL-lamp to the power supply during a discharge cycle further comprises:

cycling a second discharge transistor in response to a second digital signal.

28. The method of claim 27, further comprising:

inductively pumping energy stored on the EL-lamp back to the power supply in response to the cycling of the second transistor.

29. The method of claim 18, wherein returning energy stored on the EL-lamp to the power supply during a discharge cycle further comprises:

selectively creating a discharge path to the power supply.

30. The method of claim 29, wherein selectively creating a discharge path to the power supply further comprises:

activating one or more switches.

31. The method of claim 18, further comprising:

providing a charging path to the EL-lamp during the charging cycle; and

providing a discharging path to the power supply during the discharging cycle.

32. The method of claim 31, further comprising:

cycling a first transistor in response to a first digital signal during the charging cycle; and

cycling a second transistor in response to a second digital signal during the discharging cycle.

33. The method of claim 32, further comprising:

during an off period of the second digital signal, inductively conducting current from a negative terminal of the power supply to a positive terminal of the power supply.

34. The method of claim 32, wherein the frequency of the first digital signal is different than the frequency of the second digital signal.

35. The method of claim 32,

wherein an on portion of a cycle of the second digital signal is shorter than an off portion of the cycle of the second digital signal.

36. A method of operating an EL-lamp circuit, the method comprising:

selectively providing a charging path from a power supply to the EL-lamp during a charging cycle;

cycling a first transistor in response to a first digital signal during the charging cycle;

storing energy from a power supply on an EL-lamp during the charging cycle;

selectively providing a discharging path from the El-lamp to the power supply during a discharging cycle;

cycling a second transistor in response to a second digital signal during the discharging cycle; and

returning energy stored on the EL-lamp to the power supply during the discharge cycle via inductive energy pumping.

37. The method of claim 36, further comprising:

inductively pumping energy to the El-lamp in response to the cycling of the first transistor.

38. The method of claim 36, wherein the inductive energy pumping is controlled by the cycling of the second transistor.

39. The method of Claim 36, wherein selectively providing a charging path from the power supply to the El-lamp during the charging cycle further comprises:

selectively activating one or more switches.

40. The method of claim 36, wherein selectively providing a discharging path from the El-lamp to the power supply during the discharging cycle further comprises:

selectively activating one or more switches.

EVIDENCE APPENDIX

None

RELATED PROCEEDINGS APPENDIX

None